

<b>Interview Summary</b>	Application No.	Applicant(s)	
	09/912,315	KOBAYASHI ET AL.	
	Examiner	Art Unit	
	Kevin M. Nguyen	2674	

All participants (applicant, applicant's representative, PTO personnel):

(1) Kevin M. Nguyen. (3)\_\_\_\_\_.

(2) G.W. Thielman. (4)\_\_\_\_\_.

Date of Interview: 21 June 2005.

Type: a) ☐ Telephonic b) ☐ Video Conference  
c) ☒ Personal [copy given to: 1) ☐ applicant 2) ☒ applicant's representative]

Exhibit shown or demonstration conducted: d) ☐ Yes e) ☒ No.  
If Yes, brief description: \_\_\_\_\_.

Claim(s) discussed: 3,4,17,18 and 31-46.

Identification of prior art discussed: Tanaka et al, Marlor.

Agreement with respect to the claims f) ☒ was reached. g) ☐ was not reached. h) ☐ N/A.

Substance of Interview including description of the general nature of what was agreed to if an agreement was reached, or any other comments: discussed a proposed amendment (see attachment) that overcomes the applied prior arts. For upon further reconsideration, the Examiner will conduct further search. Await a formal response from the Applicant.

(A fuller description, if necessary, and a copy of the amendments which the examiner agreed would render the claims allowable, if available, must be attached. Also, where no copy of the amendments that would render the claims allowable is available, a summary thereof must be attached.)

THE FORMAL WRITTEN REPLY TO THE LAST OFFICE ACTION MUST INCLUDE THE SUBSTANCE OF THE INTERVIEW. (See MPEP Section 713.04). If a reply to the last Office action has already been filed, APPLICANT IS GIVEN ONE MONTH FROM THIS INTERVIEW DATE, OR THE MAILING DATE OF THIS INTERVIEW SUMMARY FORM, WHICHEVER IS LATER, TO FILE A STATEMENT OF THE SUBSTANCE OF THE INTERVIEW. See Summary of Record of Interview requirements on reverse side or on attached sheet.

Examiner Note: You must sign this form unless it is an Attachment to a signed Office action.

Kevin M. Nguyen  
Examiner's signature, if required

## Summary of Record of Interview Requirements

### Manual of Patent Examining Procedure (MPEP), Section 713.04, Substance of Interview Must be Made of Record

A complete written statement as to the substance of any face-to-face, video conference, or telephone interview with regard to an application must be made of record in the application whether or not an agreement with the examiner was reached at the interview.

### Title 37 Code of Federal Regulations (CFR) § 1.133 Interviews

#### Paragraph (b)

In every instance where reconsideration is requested in view of an interview with an examiner, a complete written statement of the reasons presented at the interview as warranting favorable action must be filed by the applicant. An interview does not remove the necessity for reply to Office action as specified in §§ 1.111, 1.135. (35 U.S.C. 132)

#### 37 CFR §1.2 Business to be transacted in writing.

All business with the Patent or Trademark Office should be transacted in writing. The personal attendance of applicants or their attorneys or agents at the Patent and Trademark Office is unnecessary. The action of the Patent and Trademark Office will be based exclusively on the written record in the Office. No attention will be paid to any alleged oral promise, stipulation, or understanding in relation to which there is disagreement or doubt.

The action of the Patent and Trademark Office cannot be based exclusively on the written record in the Office if that record is itself incomplete through the failure to record the substance of interviews.

It is the responsibility of the applicant or the attorney or agent to make the substance of an interview of record in the application file, unless the examiner indicates he or she will do so. It is the examiner's responsibility to see that such a record is made and to correct material inaccuracies which bear directly on the question of patentability.

Examiners must complete an Interview Summary Form for each interview held where a matter of substance has been discussed during the interview by checking the appropriate boxes and filling in the blanks. Discussions regarding only procedural matters, directed solely to restriction requirements for which interview recordation is otherwise provided for in Section 812.01 of the Manual of Patent Examining Procedure, or pointing out typographical errors or unreadable script in Office actions or the like, are excluded from the interview recordation procedures below. Where the substance of an interview is completely recorded in an Examiners Amendment, no separate Interview Summary Record is required.

The Interview Summary Form shall be given an appropriate Paper No., placed in the right hand portion of the file, and listed on the "Contents" section of the file wrapper. In a personal interview, a duplicate of the Form is given to the applicant (or attorney or agent) at the conclusion of the interview. In the case of a telephone or video-conference interview, the copy is mailed to the applicant's correspondence address either with or prior to the next official communication. If additional correspondence from the examiner is not likely before an allowance or if other circumstances dictate, the Form should be mailed promptly after the interview rather than with the next official communication.

The Form provides for recordation of the following information:

- Application Number (Series Code and Serial Number)
- Name of applicant
- Name of examiner
- Date of interview
- Type of interview (telephonic, video-conference, or personal)
- Name of participant(s) (applicant, attorney or agent, examiner, other PTO personnel, etc.)
- An indication whether or not an exhibit was shown or a demonstration conducted
- An identification of the specific prior art discussed
- An indication whether an agreement was reached and if so, a description of the general nature of the agreement (may be by attachment of a copy of amendments or claims agreed as being allowable). Note: Agreement as to allowability is tentative and does not restrict further action by the examiner to the contrary.
- The signature of the examiner who conducted the interview (if Form is not an attachment to a signed Office action)

It is desirable that the examiner orally remind the applicant of his or her obligation to record the substance of the interview of each case. It should be noted, however, that the Interview Summary Form will not normally be considered a complete and proper recordation of the interview unless it includes, or is supplemented by the applicant or the examiner to include, all of the applicable items required below concerning the substance of the interview.

A complete and proper recordation of the substance of any interview should include at least the following applicable items:

- 1) A brief description of the nature of any exhibit shown or any demonstration conducted,
- 2) an identification of the claims discussed,
- 3) an identification of the specific prior art discussed,
- 4) an identification of the principal proposed amendments of a substantive nature discussed, unless these are already described on the Interview Summary Form completed by the Examiner,
- 5) a brief identification of the general thrust of the principal arguments presented to the examiner,  
(The identification of arguments need not be lengthy or elaborate. A verbatim or highly detailed description of the arguments is not required. The identification of the arguments is sufficient if the general nature or thrust of the principal arguments made to the examiner can be understood in the context of the application file. Of course, the applicant may desire to emphasize and fully describe those arguments which he or she feels were or might be persuasive to the examiner.)
- 6) a general indication of any other pertinent matters discussed, and
- 7) if appropriate, the general results or outcome of the interview unless already described in the Interview Summary Form completed by the examiner.

Examiners are expected to carefully review the applicant's record of the substance of an interview. If the record is not complete and accurate, the examiner will give the applicant an extendable one month time period to correct the record.

### Examiner to Check for Accuracy

If the claims are allowable for other reasons of record, the examiner should send a letter setting forth the examiner's version of the statement attributed to him or her. If the record is complete and accurate, the examiner should place the indication, "Interview Record OK" on the paper recording the substance of the interview along with the date and the examiner's initials.

**OLIFF & BERRIDGE, PLC**

ATTORNEYS AT LAW

277 SOUTH WASHINGTON STREET  
ALEXANDRIA, VIRGINIA 22314

TELEPHONE: (703) 836-6400

FACSIMILE: (703) 836-2787

E-MAIL: EMAIL@OLIFF.COM

WWW.OLIFF.COM

June 13, 2005

**FACSIMILE TRANSMISSION COVER SHEET**

To: Examiner Kevin M. Nguyen - GAU - 2674  
U.S. Patent and Trademark Office  
Fax No. 571-273-7697 703-746-7229

From: G. W. ThielmanYour Ref.: 09/912,315Our Ref.: 110207Number of Pages Sent (Including cover sheet): 9Prepared By: gwt**Comments:**

Dear Mr. Nguyen. Enclosed are the proposed claims in preparation for the personal interview scheduled 20 June at 1000.

Support for the features in the amended claims 3, 4, 17 and 18 can be found at, for example, p. 10 line 2 - p. 11, line 11 and Figs. 3A-4B. The features in added claims 31-46 are supported in the specification at, for example, p. 11, line 20 - p. 13, line 12 and Figs. 5A-5G.

Sent by: \_\_\_\_\_

This facsimile is intended only for the use of the individual or entity named above and may contain privileged or confidential information. If you are not the intended recipient, or the employee or agent responsible to deliver it to the intended recipient, you are notified that any review, dissemination, distribution or copying of this facsimile is prohibited. If you have received this facsimile in error, please immediately notify us by facsimile or telephone, and return the facsimile to us by mail at the above address.

Application No. 09/912,315

**Amendments to the Claims:**

The following listing of claims will replace all prior versions, and listings, of claims in the application:

**PROPOSED**

1-2. (Cancelled)

3. (Currently Amended) A recording method for a photo addressable recording medium including an optical switching element and a display element, the optical switching element including a charge generating layer and a charge transport layer, a resistance component of the optical switching element being controlled at least depending on a direction of an applied voltage, the method comprising:

applying a periodic voltage to the display element for a period duration during both the case where the optical switching element is irradiated with light and the case where the optical switching element is not irradiated with light so that the periodic voltage applied to the display element for the period duration is greater than a threshold voltage of the display element to turn on a display thereof, wherein, in the case where the optical switching element is irradiated with light, after controlling an electrical charge amount of the display element by means of controlling a ratio of the resistance component depending at least on the direction of the periodic voltage and turning off the periodic voltage applied to the recording medium, the ratio of the resistance component is controlled by flowing charges generated by the charge generating layer through the charge transport layer, the display is turned off by applying a residual voltage to the display element, the residual voltage corresponding to the electrical charge amount and being effectively smaller than the threshold voltage and larger than a ground potential for a residual duration corresponding to a charge storage time greater than the period duration.

4. (Currently Amended) A recording method for a photo addressable recording

medium including an optical switching element and a display element, the optical switching

Application No. 09/912,315

element including a charge generating layer and a charge transport layer, a resistance component of the optical switching element being controlled at least depending on a direction of an applied voltage, the method comprising:

when the optical switching element is not irradiated with light, applying a periodic voltage to the display element for a period duration so that the periodic voltage does not exceed a threshold voltage of the display element; and

when the optical switching element is irradiated with light, controlling a ratio of the resistance component depending at least on the direction of the periodic voltage to control an electrical charge amount of the display element, thus applying ~~a~~ the periodic voltage to the display element for the period duration to turn on a display thereon, the ratio of the resistance component being controlled by flowing charges generated by the charge generating layer through the charge transport layer, the periodic voltage exceeding the threshold voltage due to a partial voltage increased by the decrease of the resistance component of the optical switching element and an effectively generated voltage caused by a residual voltage to the display element corresponding to the electrical charge amount, the residual voltage being effectively smaller than the threshold voltage and larger than a ground potential for a residual duration corresponding to a charge storage time greater than the period duration.

## PROPOSED

5-16. (Cancelled)

17. (Currently Amended) A recording method for a photo addressable recording medium including an optical switching element and a display element, the optical switching element including a charge generating layer and a charge transport layer, a resistance component of the optical switching element being controlled at least depending on a polarity of an applied voltage, the method comprising:

Application No. 09/912,315

applying a periodic voltage to the display element for a period duration during both the case where the optical switching element is irradiated with light and the case where the optical switching element is not irradiated with light so that the periodic voltage applied to the display element for the period duration is greater than a threshold voltage of the display element to turn on a display thereof, wherein, in the case where the optical switching element is irradiated with light, after controlling an electrical charge amount of the display element by means of controlling a ratio of the resistance component depending at least on the polarity of the periodic voltage and turning off the periodic voltage applied to the recording medium, the ratio of the resistance component is controlled by flowing charges generated by the charge generating layer through the charge transport layer, the display is turned off by applying a residual voltage to the display element, the residual voltage corresponding to the electrical charge, effectively smaller than the threshold voltage and larger than a ground potential for a residual duration corresponding to a charge storage time greater than the period duration.

18. (Currently Amended) A recording method for a photo addressable recording medium including an optical switching element and a display element, the optical switching element including a charge generating layer and a charge transport layer, a resistance component of the optical switching element being controlled at least depending on a polarity of an applied voltage, the method comprising:

## PROPOSED

when the optical switching element is not irradiated with light, applying a periodic voltage to the display element for a period duration so that the periodic voltage does not exceed a threshold voltage of the display element; and

when the optical switching element is irradiated with light, controlling a ratio of the resistance component depending at least on the polarity of the periodic voltage to control an electrical charge amount of the display element, thus applying a the periodic

voltage to the display element for a period duration to turn on a display thereon, the ratio of



Application No. 09/912,315

the resistance component being controlled by flowing charges generated by the charge generating layer through the charge transport layer, the periodic voltage exceeding the threshold voltage due to a partial voltage increased by the decrease of the resistance component of the optical switching element and an effectively generated voltage caused by a residual voltage to the display element corresponding to the electrical charge, the residual voltage being effectively smaller than the threshold voltage and larger than a ground potential for a residual duration corresponding to a charge storage time greater than the period duration.

19-30. (Cancelled)

31. (New) The recording method according to claim 3, wherein the display element has ordered R, B and G layers corresponding to respective threshold voltages  $V_R < V_B < V_G$ , and the threshold voltage corresponds to one of the respective threshold voltages.

32. (New) The recording method according to claim 3, wherein the threshold voltage corresponds to one of a first threshold voltage that causes a low reflectivity of the display element and a second threshold voltage that causes a high reflectivity of the display element.

## PROPOSED

33. (New) The recording method according to claim 31, wherein the threshold voltage  $V_R$  for the R layer corresponds to one of a first R threshold voltage  $V_{1th-R}$  and a second R threshold voltage  $V_{2th-R}$ , the threshold voltage  $V_B$  for the B layer corresponds to one of a first B threshold voltage  $V_{1th-B}$  and a second B threshold voltage  $V_{2th-B}$ , the threshold voltage  $V_G$  for the G layer corresponds to one of a first G threshold voltage  $V_{1th-G}$  and a second G threshold voltage  $V_{2th-G}$ , and relative values of the respective threshold voltages rank in ascending orders of magnitude  $V_{1th-R}$ ,  $V_{1th-B}$ ,  $V_{1th-G}$ ,  $V_{2th-R}$ ,  $V_{2th-B}$  and  $V_{2th-G}$ .

34. (New) The recording method according to claim 33, wherein the periodic voltage corresponds to a light amount, the light amount that rank in ascending order of

magnitude  $I_1$ ,  $I_2$ ,  $I_3$ ,  $I_4$ ,  $I_5$ ,  $I_6$  and  $I_7$  in ascending order, the periodic voltage at  $I_1$  being

Application No. 09/912,315

between  $V_{1th-G}$  and  $V_{2th-R}$  to produce black, the periodic voltage at  $L_1$  being between  $V_{2th-R}$  and  $V_{2th-B}$  and the residual voltage is between the ground potential and  $V_{1th-R}$  to produce red, the periodic voltage at  $L_2$  being between  $V_{2th-B}$  and  $V_{2th-G}$  and the residual voltage is between the ground potential and  $V_{1th-R}$  to produce magenta, the periodic voltage at  $L_3$  being between  $V_{2th-B}$  and  $V_{2th-G}$  and the residual voltage is between  $V_{1th-R}$  and  $V_{1th-B}$  to produce blue, the periodic voltage at  $L_4$  being above  $V_{2th-G}$  and the residual voltage is between  $V_{1th-R}$  and  $V_{1th-B}$  to produce cyan, the periodic voltage at  $L_5$  being above  $V_{2th-G}$  and the residual voltage is between  $V_{1th-B}$  and  $V_{1th-G}$  to produce green, the periodic voltage at  $L_6$  being above  $V_{2th-G}$  and the residual voltage is between the ground potential and  $V_{1th-R}$  to produce white.

35. (New) The recording method according to claim 4, wherein the display element has ordered R, B and G layers corresponding to respective threshold voltages  $V_R < V_B < V_G$ , and the threshold voltage corresponds to one of the respective threshold voltages.

36. (New) The recording method according to claim 4, wherein the threshold voltage corresponds to one of a first threshold voltage that causes a low reflectivity of the display element and a second threshold voltage that causes a high reflectivity of the display element.

## PROPOSED

37. (New) The recording method according to claim 34, wherein the threshold voltage  $V_R$  for the R layer corresponds to one of a first R threshold voltage  $V_{1th-R}$  and a second R threshold voltage  $V_{2th-R}$ , the threshold voltage  $V_B$  for the B layer corresponds to one of a first B threshold voltage  $V_{1th-B}$  and a second B threshold voltage  $V_{2th-B}$ , the threshold voltage  $V_G$  for the G layer corresponds to one of a first G threshold voltage  $V_{1th-G}$  and a second G threshold voltage  $V_{2th-G}$ , and relative values of the respective threshold voltages rank in ascending orders of magnitude  $V_{1th-R}$ ,  $V_{1th-B}$ ,  $V_{1th-G}$ ,  $V_{2th-R}$ ,  $V_{2th-B}$  and  $V_{2th-G}$ .

38. (New) The recording method according to claim 37, wherein the periodic



Application No. 09/912,315

magnitude  $L_0, L_1, L_2, L_3, L_4, L_5$  and  $L_6$  in ascending order, the periodic voltage at  $L_0$  being between  $V_{1th-G}$  and  $V_{2th-R}$  to produce black, the periodic voltage at  $L_1$  being between  $V_{2th-R}$  and  $V_{2th-B}$  and the residual voltage is between the ground potential and  $V_{1th-R}$  to produce red, the periodic voltage at  $L_2$  being between  $V_{2th-B}$  and  $V_{2th-G}$  and the residual voltage is between the ground potential and  $V_{1th-R}$  to produce magenta, the periodic voltage at  $L_3$  being between  $V_{2th-B}$  and  $V_{2th-G}$  and the residual voltage is between  $V_{1th-R}$  and  $V_{1th-B}$  to produce blue, the periodic voltage at  $L_4$  being above  $V_{2th-G}$  and the residual voltage is between  $V_{1th-R}$  and  $V_{1th-B}$  to produce cyan, the periodic voltage at  $L_5$  being above  $V_{2th-G}$  and the residual voltage is between  $V_{1th-B}$  and  $V_{1th-G}$  to produce green, the periodic voltage at  $L_6$  being above  $V_{2th-G}$  and the residual voltage is between the ground potential and  $V_{1th-R}$  to produce white.

39. (New) The recording method according to claim 17, wherein the display element has ordered R, B and G layers corresponding to respective threshold voltages  $V_R < V_B < V_G$ , and the threshold voltage corresponds to one of the respective threshold voltages.

40. (New) The recording method according to claim 17, wherein the threshold voltage corresponds to one of a first threshold voltage that causes a low reflectivity of the display element and a second threshold voltage that causes a high reflectivity of the display element.

## PROPOSED

41. (New) The recording method according to claim 39, wherein the threshold voltage  $V_R$  for the R layer corresponds to one of a first R threshold voltage  $V_{1th-R}$  and a second R threshold voltage  $V_{2th-R}$ , the threshold voltage  $V_B$  for the B layer corresponds to one of a first B threshold voltage  $V_{1th-B}$  and a second B threshold voltage  $V_{2th-B}$ , the threshold voltage  $V_G$  for the G layer corresponds to one of a first G threshold voltage  $V_{1th-G}$  and a second G threshold voltage  $V_{2th-G}$ , and relative values of the respective threshold voltages rank in ascending orders of magnitude  $V_{1th-R}, V_{1th-B}, V_{1th-G}, V_{2th-R}, V_{2th-B}$  and  $V_{2th-G}$ .

Application No. 09/912,315

42. (New) The recording method according to claim 41, wherein the periodic voltage corresponds to a light amount, the light amount that rank in ascending order of magnitude  $L_0, L_1, L_2, L_3, L_4, L_5$  and  $L_6$  in ascending order, the periodic voltage at  $L_0$  being between  $V_{1th-G}$  and  $V_{2th-R}$  to produce black, the periodic voltage at  $L_1$  being between  $V_{2th-R}$  and  $V_{2th-B}$  and the residual voltage is between the ground potential and  $V_{1th-R}$  to produce red, the periodic voltage at  $L_2$  being between  $V_{2th-B}$  and  $V_{2th-G}$  and the residual voltage is between the ground potential and  $V_{1th-R}$  to produce magenta, the periodic voltage at  $L_3$  being between  $V_{2th-B}$  and  $V_{2th-G}$  and the residual voltage is between  $V_{1th-R}$  and  $V_{1th-B}$  to produce blue, the periodic voltage at  $L_4$  being above  $V_{2th-G}$  and the residual voltage is between  $V_{1th-R}$  and  $V_{1th-B}$  to produce cyan, the periodic voltage at  $L_5$  being above  $V_{2th-G}$  and the residual voltage is between  $V_{1th-B}$  and  $V_{1th-G}$  to produce green, the periodic voltage at  $L_6$  being above  $V_{2th-G}$  and the residual voltage is between the ground potential and  $V_{1th-R}$  to produce white.

43. (New) The recording method according to claim 18, wherein the display element has ordered R, B and G layers corresponding to respective threshold voltages  $V_R < V_B < V_G$ , and the threshold voltage corresponds to one of the respective threshold voltages.

44. (New) The recording method according to claim 18, wherein the threshold voltage corresponds to one of a first threshold voltage that causes a low reflectivity of the display element and a second threshold voltage that causes a high reflectivity of the display element.

## PROPOSED

45. (New) The recording method according to claim 43, wherein the threshold voltage  $V_R$  for the R layer corresponds to one of a first R threshold voltage  $V_{1th-R}$  and a second R threshold voltage  $V_{2th-R}$ , the threshold voltage  $V_B$  for the B layer corresponds to one of a first B threshold voltage  $V_{1th-B}$  and a second B threshold voltage  $V_{2th-B}$ , the threshold voltage  $V_G$  for the G layer corresponds to one of a first G threshold voltage  $V_{1th-G}$  and a

Application No. 09/912,315

second G threshold voltage  $V_{2th-G}$ , and relative values of the respective threshold voltages rank in ascending orders of magnitude  $V_{1th-R}$ ,  $V_{1th-B}$ ,  $V_{1th-G}$ ,  $V_{2th-R}$ ,  $V_{2th-B}$  and  $V_{2th-G}$ .

46. (New) The recording method according to claim 45, wherein the periodic voltage corresponds to a light amount, the light amount that rank in ascending order of magnitude  $L_0$ ,  $L_1$ ,  $L_2$ ,  $L_3$ ,  $L_4$ ,  $L_5$  and  $L_6$  in ascending order, the periodic voltage at  $L_0$  being between  $V_{1th-G}$  and  $V_{2th-R}$  to produce black, the periodic voltage at  $L_1$  being between  $V_{2th-R}$  and  $V_{2th-B}$  and the residual voltage is between the ground potential and  $V_{1th-R}$  to produce red, the periodic voltage at  $L_2$  being between  $V_{2th-B}$  and  $V_{2th-G}$  and the residual voltage is between the ground potential and  $V_{1th-R}$  to produce magenta, the periodic voltage at  $L_3$  being between  $V_{2th-B}$  and  $V_{2th-G}$  and the residual voltage is between  $V_{1th-R}$  and  $V_{1th-B}$  to produce blue, the periodic voltage at  $L_4$  being above  $V_{2th-G}$  and the residual voltage is between  $V_{1th-R}$  and  $V_{1th-B}$  to produce cyan, the periodic voltage at  $L_5$  being above  $V_{2th-G}$  and the residual voltage is between  $V_{1th-B}$  and  $V_{1th-G}$  to produce green, the periodic voltage at  $L_6$  being above  $V_{2th-G}$  and the residual voltage is between the ground potential and  $V_{1th-R}$  to produce white.

**PROPOSED**